Date: August 8, 2003

To: Interested Agency

Subject: Request for Preliminary Input on the Proposed Goodwin Hydroelectric Project

Tri-Dam Project (Tri-Dam) is a project jointly operated by the South San Joaquin Irrigation District and the Oakdale Irrigation District. Tri-Dam operates Goodwin, Tulloch, Beardsley, and Donnells dams and reservoirs on the Stanislaus River, as well as associated hydroelectric and diversion facilities.

Tri-Dam has obtained a preliminary permit for constructing a hydroelectric project at the existing Goodwin Dam site. We have completed preliminary studies and are nearing a decision on whether to pursue the project. Tri-Dam would like your input into the project to determine the environmental or other issues and constraints may exist that would affect project feasibility, design, and cost. This information is understood to be preliminary; if the project advances, it will undergo the full environmental scoping and study process, at which time your agency will have an opportunity to offer additional consultation or comments.

Please review the enclosed project description materials and respond to me **no later than Sept 5**. Email responses are preferred. I would also be happy to accept comments by regular mail or telephone. Please contact me or Mick Klasson at:

Steve Felte
General Manager
Box 1158
Pinecrest, CA 95364-0158
(209) 965-3996
FAX (209) 965-4235
sjf@tridamproject.com

Mick Klasson
Environmental Planner
640 Buchanan Street
Davis, CA 95616
(530) 758-0839
mick@ivwnet.com

Any input on the following would be appreciated:

- Based on the preliminary information enclosed, would your agency or organization be likely to favor or oppose the project or its alternatives?

- What specific issues might affect its feasibility and/or require detailed analysis in the environmental process?

- What project design features or mitigation measures would you expect to find necessary for a project of this nature?

- If you represent an agency, would your agency require any permits for the project that are not identified in the project description?

Thank you for your consideration of this project. It is hoped that through this early contact we can make the best decision on the project and minimize its impacts if it is pursued. If you have any questions, please contact me as indicated above.

Sincerely,

Steve Felte, General Manager
Tri-Dam Project

Goodwin Hydroelectric Project
Preliminary Project Description

Introduction

This project description has been prepared to portray the likely configuration of the Goodwin Hydroelectric Project at three alternative sites. A preliminary permit has been obtained for the project from the Federal Energy Regulatory Commission (FERC). The permit establishes Tri-Dam's intent while allowing time to investigate the project opportunities and constraints prior to filing for the actual hydroelectric license. This document is intended to be used by agencies with jurisdiction over the project and other stakeholders to determine what possible issues may be associated with the project prior to commitment by Tri-Dam to a particular project design or location. Therefore, while this description is meant to capture the range of possibilities, some details may not yet be known or may change during project design. If the project advances, important design details will be worked out and evaluated fully from an engineering and environmental standpoint.

Location

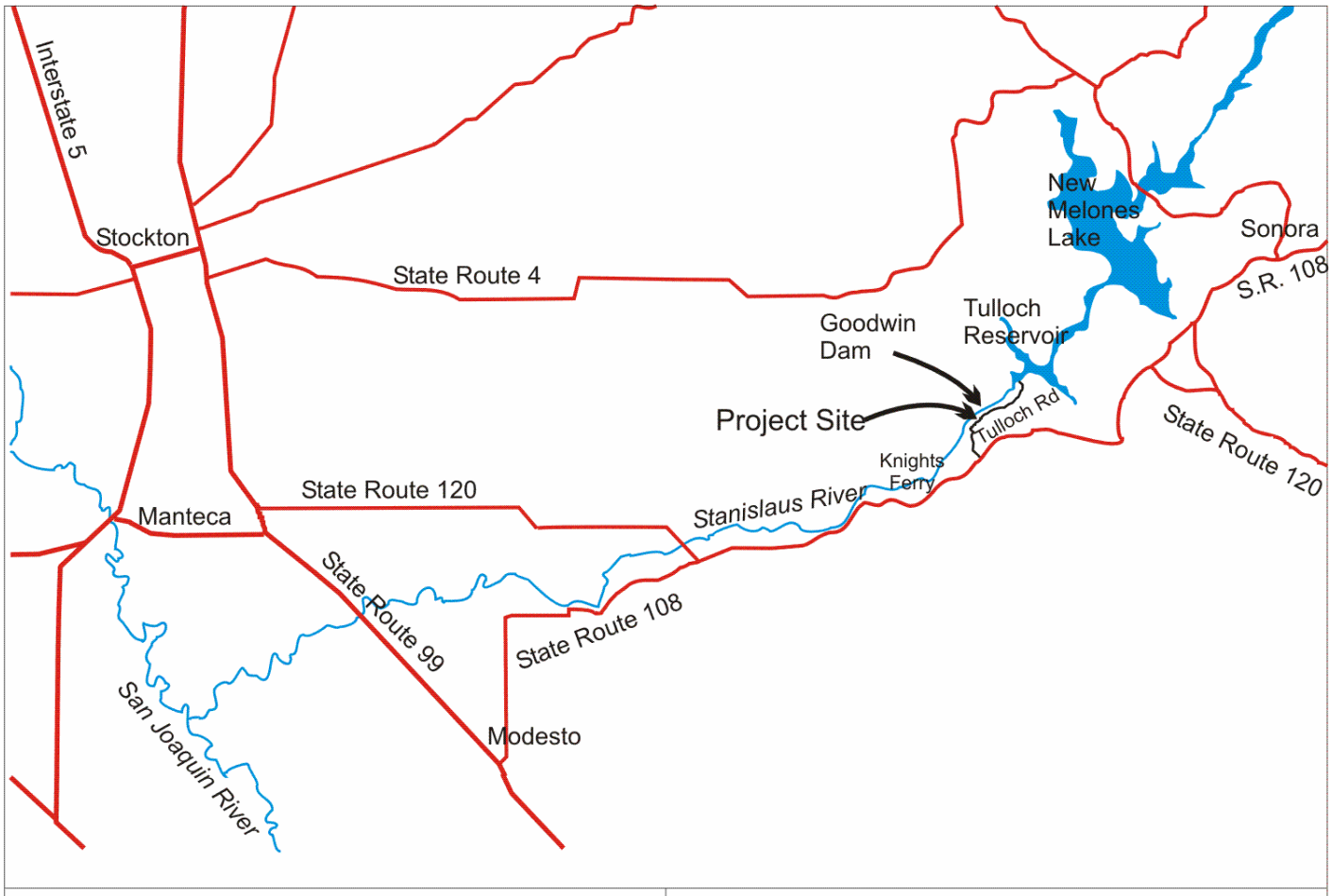
The project is located entirely within Tuolumne County, on the south bank of the Stanislaus River downstream of the existing Goodwin Dam (Figure 1). It is reached by way of Tulloch Road from State Highway 120/108. The nearest community is Knights Ferry, approximately 3.5 miles southwest of the site.

Existing Infrastructure

Tri-Dam operates the existing Goodwin Dam, which impounds 502 acre-feet. The dam has a crest elevation of 359 feet above Mean Sea Level and a base elevation of approximately 300 feet. Goodwin Dam is approximately 1.6 miles downstream of Tulloch Dam, also operated by Tri-Dam, which has a storage capacity of 56,000 acre-feet. More significantly, it is just 8.3 miles below New Melones Dam, which impounds 2.4 million acre-feet. New Melones Reservoir is operated to store and release Stanislaus River flows to meet water supply and environmental needs. Goodwin Dam is used to divert water to the Stockton East Water District through a tunnel in the reservoir, South San Joaquin Irrigation District (SSJID) and Oakdale Irrigation District (OID) via a canal on the north side of the river (north canal), which serves both districts, and a canal on the south bank (south canal) which serves OID. The dam spills continuously over its crest to the river and is not used for variable storage.

Proposed Hydroelectric Project

Tri-Dam proposes to build a hydroelectric facility that would increase the amount of water taken through the south canal headworks, conveying the water currently spilling over the crest into a penstock that would discharge through a turbine back into the Stanislaus River below the dam. Total hydraulic head for the project would be between about 60 feet and 80 feet, depending on which of three alternative sites is selected. The alternatives differ in the location of the powerplant building and in the alignment of the water conduit (See Figure 2).



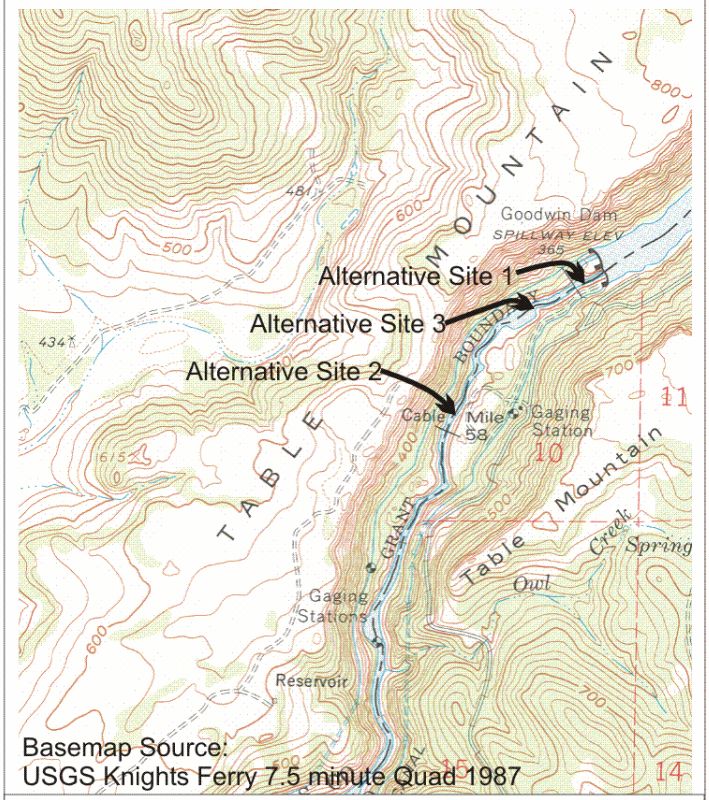
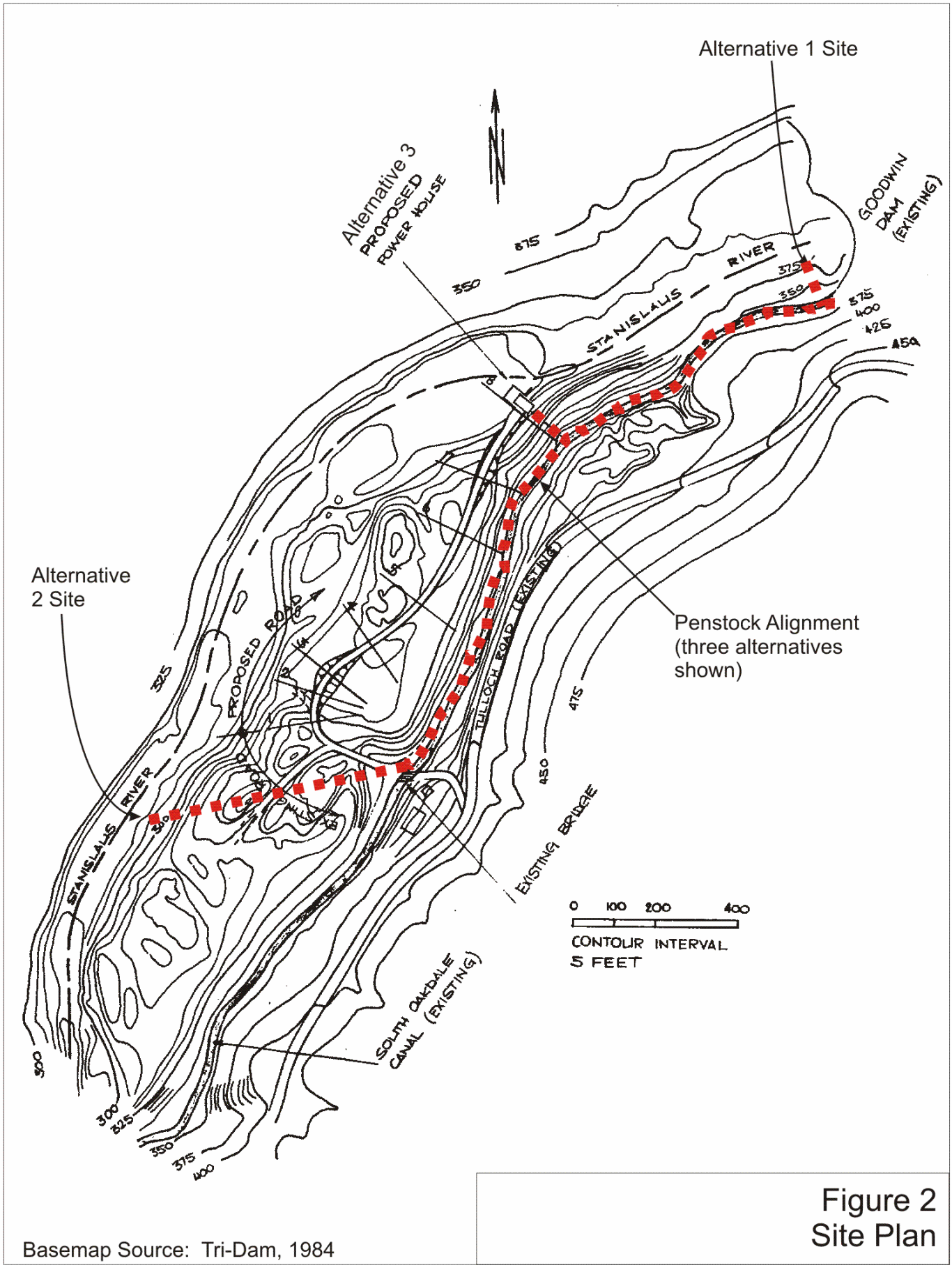


Figure 1
Project Site Location



Basemap Source: Tri-Dam, 1984

Figure 2
Site Plan

Telephone: (209) 965-3996 / (209) 532-3838 * Fax: (209) 965-4235 * e-mail: info@tridamproject.com

Features Common to Project Alternatives

Modification of the south canal headworks. This existing headworks is used to control the flow of water from Goodwin Reservoir into the south canal and on for distribution to OID customers. The headworks would be modified to allow diversion of an additional flow up to about 1,000 cubic feet per second (cfs) from Goodwin into the penstock for the hydroelectric project. The existing headworks withdraws water from approximately 15 feet below the surface of the lake.

Penstock. The penstock would be a maximum of 10 feet in diameter (the size would depend on final flow rating of the project). It may be buried or installed aboveground, depending on location and site constraints.

Powerhouse and turbine. The powerhouse would be a structure of approximately 25 feet wide, 55 feet long, and 35 feet tall. Likely construction would be painted metal and concrete. It would house a single "Kaplan" turbine—a design that is highly efficient under a wide range of flow.

Stanislaus River Temperature Effects. Water withdrawn through the south canal headworks, 15 feet below the water surface elevation, is cooler than the water being spilled over the top of Goodwin Dam and remaining in the Stanislaus River. The project, by discharging cooler water into the river in lieu of the dam spill, would reduce water temperatures downstream. The temperature reduction would be greatest during the summer and generally improve water temperatures approximately 0.5 degrees Fahrenheit near Oakdale. Figure 3 shows a modeled temperature reduction had the project existed during a recent four-year period. This reduction would potentially benefit chinook salmon and steelhead trout that spawn and rear in the river.

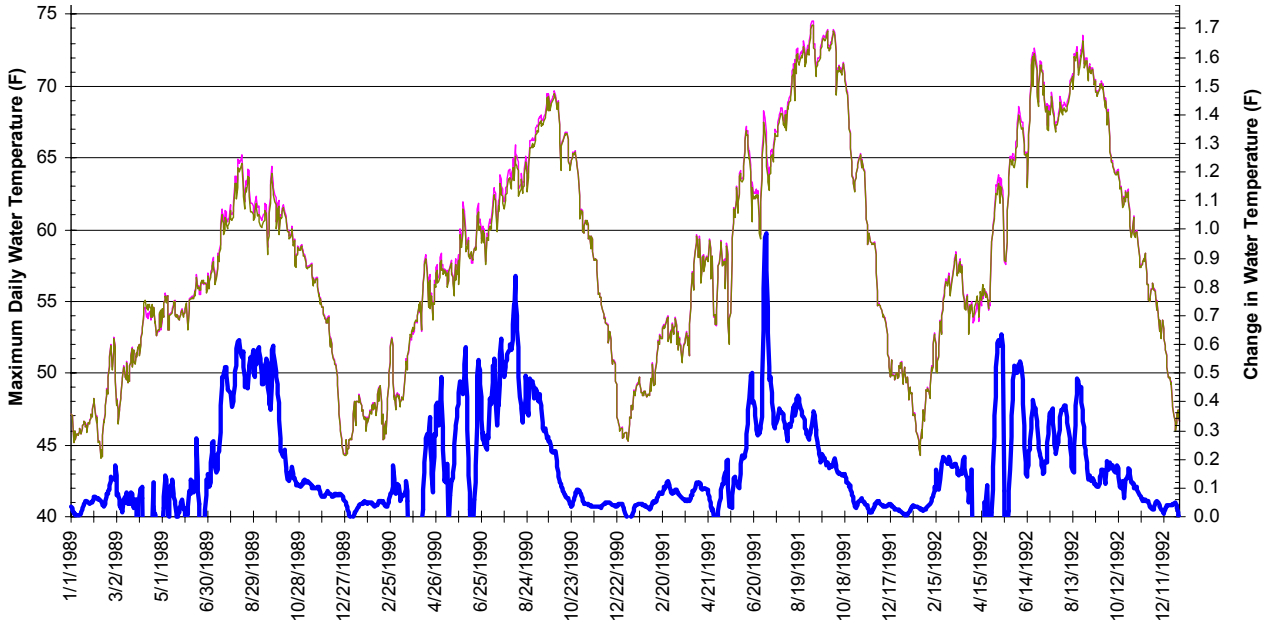


Figure 3. Stanislaus River Water Temperatures at Orange Blossom Bridge. Existing temperatures (left axis, graphed as thin line) and projected reduction in water temperature for a 750-cfs project (right axis, thick line)(Source: AD Consultant Temperature Model).

Shaded area represents unsuitable temperatures for Central Valley steelhead and fall-run Chinook salmon. Generalized from DWR, 2003; Moyle, 2002; USFWS, 1986a, and USFWS 1986b.

Powerline. A 17 kV overhead electric transmission line on wood poles would be constructed from the powerhouse to the existing transmission line along Tulloch Road. The powerlines will be constructed according to industry standards to prevent raptor electrocutions.

Access Road. An access road would be constructed from Tulloch Road to the powerhouse. It would have a gravel or other all-weather surface and a 15-foot maintained width. The road would begin at the existing bridge crossing of the south canal, and then turn northeast for alternative sites 1 and 3 or south and west for alternative site 2.

Operation. The project would be operated as a run of the river. Water that currently flows over the top of the Goodwin Dam and maintains flows in the Lower Stanislaus River would be diverted into the hydroelectric project, where it would be used to generate power and would immediately be discharged back into the Stanislaus River below Goodwin Dam, where it would still maintain the river flow. No water would be consumed in the process or diverted away from the river beyond the terminus of the hydroelectric project. Storing the water for peaking power generation is not proposed and would not be feasible because of the need to maintain river flows.

Generating capacity. Generating capacity will depend on final plant location and sizing. However, based on a nominal 60 feet of head and assuming a 1,000 cfs rated flow, the project would have a 4.3 megawatt (MW) power output and an annual production averaging about 18.3 gigawatt-hours (GWh) of energy (AD Consultants, 2001). That production would provide enough electricity for about 2,150 households based on an average usage of 8,549 kilowatt-hours per year (EIA, 2003). Electricity produced would be sold into the California grid.

Permits and approvals. It is anticipated that the following permits and approvals would be required:

Hydroelectric License (FERC)
Water Rights (State Water Resources Control Board)
Water Quality Certification (401) State Water Resources Control Board
National Environmental Policy Act (NEPA)/California Environmental Quality Act (CEQA) compliance (FERC and SWRCB or Tri-Dam Project)
Land easement for penstock and powerhouse (US Army Corps of Engineers)
Clean Water Act Section 404 Permit (US Army Corps of Engineers)
Streambed Alteration Permit (California Department of Fish and Game)
Conditional Use Permit and Grading Permit (Tuolumne County Planning Department)

Alternative 1

Under this alternative, the power plant would be constructed near the base of Goodwin Dam. It would have minimal effects on the Stanislaus River because the point of discharge would be very close to the existing dam overflow point. The penstock would head downslope immediately below its point of connection with the existing headworks. Total penstock length would be approximately 200 feet.

This alternative would require construction of a 1,600-foot access road to the powerhouse. Due to the steepness of the terrain, the feasibility of this access road and thus this alternative is uncertain.

Alternative 2

Under this alternative, the power plant would be constructed approximately 2,000 feet downstream of Goodwin Dam. The penstock would be buried along the south canal for approximately 1,600 feet and then would turn downslope towards the river. The power plant access road would be approximately 1,000 feet long.

Alternative 3

This alternative would place the power plant partway between alternatives 1 and 2. The penstock would follow the south canal alignment for 700 feet and then turn and run 100 feet downslope to the river's edge. The power plant access road would be approximately 800 feet long.

Environmental Features

Geology

The project site is mapped as Mesozoic volcanic and metavolcanic rocks underlying the Table Mountain Latite volcanic flow deposits (CDMG, 1977). Soils are thin.

Hydrology

As noted previously, flows in the Stanislaus River downstream of Goodwin Dam are influenced by diversions at Goodwin Dam as well as by operation of Tulloch Reservoir and New Melones Lake. Figure 4 shows the average monthly flows in the project reach from 1922-1992.

Biological Resources

The project site is in the lower foothills metamorphic belt ecological subregion of California (USFS, 1997). A botanical survey was conducted for an earlier FERC license application on the site (Tri-Dam, 1984). The upper slopes of the site near the south canal have patches of non-native annual grassland, interspersed with mixed woodland species such as buckeye, blue oak, live oak, toyon, gray pine, tree of heaven, California black walnut. Near the Stanislaus River the vegetation shifts to riparian woodland, with representative species including cottonwood, willows, white alder, blue elderberry, and Himalaya berry.

The project site's connectivity with undeveloped lands and the Stanislaus River corridor enhances its suitability for wildlife habitat. State and federally listed threatened and endangered species with the potential to occur on the site include the following (USFWS, 2003; CDFG, 2003; CDFG, 1995).

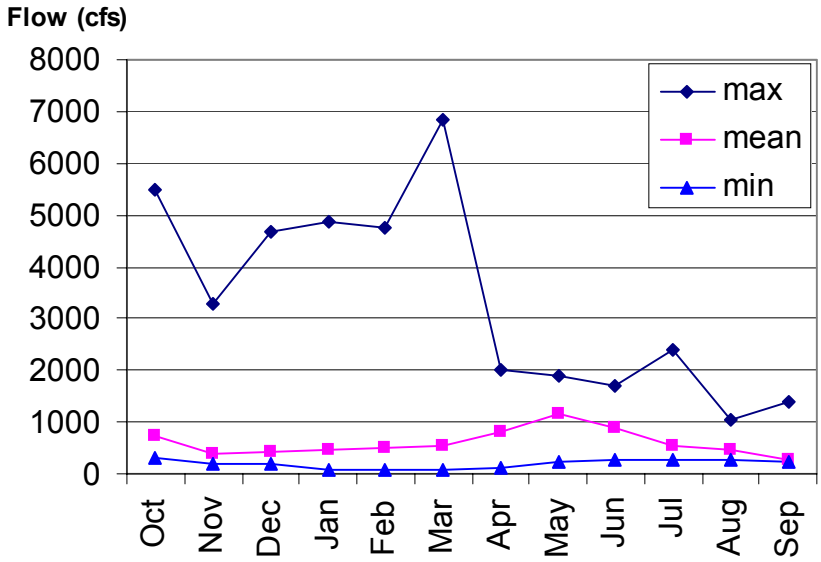


Figure 4: Monthly Average Goodwin Releases 1922-1992. Source: AD Consultants 2001.

Invertebrates

Desmocerus californicus dimorphus - valley elderberry longhorn beetle (Federally Threatened)

Fish

Oncorhynchus mykiss - Central Valley steelhead (Federally Threatened)

Amphibians

Rana aurora draytonii - California red-legged frog (Federally Threatened)

Birds

Haliaeetus leucocephalus - bald eagle (Federally Threatened, State Endangered)
Empidonax trailii – willow flycatcher (State Endangered)
Coccyzus americanus – yellow-billed cuckoo (State Endangered)
Buteo swainsoni – Swainson's hawk (State Threatened)

Vegetation surveys at the site in 1984 found no vernal pools or serpentine soil outcrops, so sensitive plant and invertebrate species associated with these habitats are not likely to be found at the site. Part of the project area for alternative site 2 may not have been surveyed in 1984.

The Stanislaus River below Goodwin Dam provides spawning habitat for the Central Valley ecologically significant unit (ESU) of steelhead and for fall-run chinook salmon (fall-run chinook are not listed but are a Federal Candidate for listing). Spawning salmon and redds have

been observed in three areas in the project vicinity (Kondolf et al. 2001); two are between alternative sites 2 and 3 and the third is immediately downstream of site 2. Physical limitations on spawning habitat suitability include low river flows, high temperatures (see Figure 3), and inadequate supply of spawning gravels. In the past 10 years, about 20,000 cubic yards of gravel have been added to the lower Stanislaus River to enhance spawning habitat, including some placed by helicopter in Goodwin Canyon (Kondolf, 2001). Such projects are temporary unless continually renewed, as the gravel moves downriver over time.

Cultural Resources

A cultural resources survey of the site was done for an earlier license application (Tri-Dam, 1984). The project site is within the area once inhabited by the Central Sierra Miwok. A village was once located just downstream of the site on the north side of the river. During historic times, much gold mining occurred on and around the lower Stanislaus River. The cultural resources survey of the vicinity reported a Native American bedrock mortar site, a short section of historic canal, and the remains of a mining area in the project vicinity. These sites would be avoided by the alternatives. A portion of the affected area for alternative 2 has not yet been surveyed.

Land Use

The site is within an undeveloped portion of Tuolumne County and spans both OID and US Army Corps of Engineers-owned land. Surrounding land uses include other public land and cattle grazing on private land. The nearest residential areas are at Tulloch Reservoir and Knights Ferry.

Recreational boating occurs at Tulloch Reservoir, and the reach of Stanislaus River adjoining the project site is used by whitewater rafters and kayakers. It is rated as class V, characterized by "strong currents, big waves, boulders, and holes powerful enough to hold or flip boats" although with portages around key rapids it can be made a class III or IV run (Cassady and Calhoun, 1995). As such it provides recreational boating for experts. The put-in point for whitewater boaters is at a developed site whose entrance and bridge crossing of the south canal coincides with the start of the proposed road access for all three alternatives.

References

AD Consultants. 2001. Reconnaissance Study Proposed Goodwin Hydroelectric Project. December.

Cassady and Calhoun (Jim Cassady and Fryar Calhoun). 1995. California Whitewater: A guide to the Rivers. Third Edition. North Fork Press. April.

CDFG (California Department of Fish and Game). 1995. Stanislaus River Basin and Calaveras River Water Use Program Threatened and Endangered Species Report. March.

CDFG 2003. California Plants and Animals. Threatened and Endangered Species. http://www.dfg.ca.gov/hcpb/species/t_e_spp/tespp.shtml. Website accessed 7/28/03.

CDMG (California Division of Mines and Geology). 1977. Geologic Map of California. Complilation by Charles W. Jennings. Fifth Printing, 2000.

DWR (California Department of Water Resources). 2003. Bulletin 250. Fish Passage Improvement Program. Public Review Draft. Website accessed 7/28/03. http://www.isi.water.ca.gov/fish/b250.shtml.

EIA (United States Department of Energy, Energy Information Agency). 2003. A Look at Residential Energy Consumption in 1997. Website accessed 7/28/03. http://www.eia.doe.gov/emeu/recs/pubs.html.

Kondolf et al. (G. Mathias Kondolf, A. Falzone, K. S. Schneider). 2001. Channel Change and Spawning Habitat on the Stanislaus River Below Goodwin Dam. Report to the U.S. Fish and Wildlife Service. March 22.

Moyle, P. B. 2002. Inland Fishes of California. University of California Press.

Tri-Dam. 1984. License Application for The Goodwin Dam Hydroelectric Project Tuolumne County California. FERC Project No. 3552-002. March.

USFS (United States Department of Agriculture Forest Service). 1997. Ecological Subregions of California. Section and Subsection Descriptions. September.

USFWS (United States Department of the Interior Fish and Wildlife Service). 1986a. Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (Pacific Southwest). Chinook Salmon. Biological Report 82. With U.S. Army Corps of Engineers. April.

USFWS. 1986b. Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (Pacific Northwest). Steelhead Trout. Biological Report 82. With U.S. Army Corps of Engineers. August.

USFWS. 2003. Federal Endangered and Threatened Species that May Be Affected by Projects in the KNIGHTS FERRY 7 1/2 Minute Quad. Database Last Updated: June 5, 2003. Website Accessed 7/23/03. http://sacramento.fws.gov/es/spp_lists/QuadName_Detail.cfm?ID=459C.